

Amendments to the Specification

The paragraph starting at page 1, line 21 and ending at page 2, line 11 has been amended as follows.

In the inkjet recording apparatus, performance such as colorization of characters and patterns (or graphics) to be recorded, speed-enhancement of recording operation, or quality-enhancement of recording image has been remarkably improved. The inkjet recording apparatus becomes familiar to users more and more, such that the inkjet recording apparatus is placed on an individual disk desk in an office or the inkjet recording apparatus is used on daily basis in home. Therefore, in the inkjet recording apparatus, user requests for further miniaturization and weight reduction while maintaining the high performance are increased. In particular, reduction of the thickness of the inkjet recording apparatus is strongly desired so that the inkjet recording apparatus can be stored in a bookshelf or a drawer of the desk while the user does not use the inkjet recording apparatus.

The paragraphs starting at page 2, line 26 and ending at page 4, line 1 have been amended as follows.

However, even if the recording head is miniaturized, the advantage of the miniaturization of the recording head is lessened when a carriage mounting the recording head and peripheral parts of the carriage, i.e., the portion which is scanned with the recording head, cannot ~~can~~ not be miniaturized.

From the point of view of maintenance, the recording head generally has a configuration in which the recording head is detachably attachable to the carriage. In the detachably attachable type recording head, a configuration for fixing the recording head on the carriage is provided. In many cases, it is necessary to adopt the configuration in which the user is easily operates, operated by a user, in order that the user can exchange the recording heads. Therefore, a relatively large operating lever is conventionally provided in order to fix the recording head to the carriage. Further, a connector which connects the recording head and a cable for supplying a recording signal or electric power to the recording head is also required for the carriage. For example, in Japanese Patent Application Laid-Open No. H04-235040, there are disclosed a mounting portion for mounting the recording head on the carriage and a lever member displacably provided so as to cover the recording head mounting portion, wherein connection or release of the connector is performed so that the connector is caused to come into contact with the mounted recording head and to separate from the mounted recording head by rotating the lever member.

The paragraph starting at page 5, line 5 and ending at line 26 has been amended as follows.

The conventional example disclosed in Japanese Patent Application Laid-Open No. H10-181007 has the configuration, in which the pressure contact connector utilizing the elastic force of the rubber pad is used and a reaction force of the connector is received by a structure of the carriage itself. In recent years, as the number of nozzles of the recording head is increased, the number of contact points of the connector tends to be increased. When the larger number of contact points of the connector is provided, in order to permit the reaction force, it is necessary to strengthen the structure of the carriage itself, and the apparatus tends to be enlarged. In order to solve the above problem, there is the method in which the card edge connector is adopted. However, in the conventional example disclosed in Japanese Patent Application Laid-Open No. H10-181007, since the fixation of the carriage and the connection of the connector are performed by the rotational operation of the recording head, there is the problem that the card edge connector cannot be used.

The paragraph starting at page 6, line 10 and ending at page 7, line 3 has been amended as follows.

It is another object of the invention to provide a recording apparatus comprising a head holding member which detachably mounts a recording head including a head side connecting portion to which electric power for driving the recording head and a signal are transmitted, the head holding member including a card edge connector where the head side connecting portion is inserted for electric connection when the recording head is mounted, a lever member which is arranged in the head holding member, the lever member inserting the recording head into the head holding member and detaching the recording head from the head holding member, by rotation of the lever member, and a recording head pressing portion which is arranged in the lever member, the recording head pressing portion pressing the recording head in a direction in which the head side connecting portion is inserted into the card edge connector, wherein the recording head pressing portion is arranged near a rotational center of the lever member.

The paragraph starting at page 8, line 4 and ending at line 6 has been amended as follows.

Figs. 10A, 10B, and 10C are ~~a perspective view~~ views illustrating a releasing operation of the recording head, ~~respectively~~.

The paragraph starting at page 9, line 15 and ending at line 25 has been amended as follows.

A recording head 500 in the embodiment will be described below referring to Fig. 2. An ink tank 502 which ~~reserves~~ stores ink inside is detachably mounted on a recording head cartridge 501, and the recording head cartridge 501 has recording nozzles (not shown) which ~~ejects~~ eject the ink supplied from the ink tank 502 according to recording information. The recording head cartridge 501 ~~adopts~~ is of a so-called cartridge type in which the recording head cartridge 501 is detachably mounted onto the later-mentioned carriage 401.

The paragraph starting at page 15, line 18 and ending at page 16, line 10 has been amended as follows.

As shown in Fig. 7, in the head set lever 403, stoppers 403d are provided with a predetermined clearance to each of the pressing portions 403a on the right and left sides. Each stopper 403d is integrally formed by bending the sheet metals of the first side plate portion 403l and the second side plate portion 403m, which constitute the head set lever 403. The pressing portion 403a presses a slope portion 501a, which is provided in the recording head cartridge 501, by the rotation of the head set lever 403. At this point,

the electric wiring board 506 is guided to an inlet port in the head connector 405 and inserted into the head connector 405. When an edge of the wiring board 506 is plunged into the contact pin 405a of the head connector 405, ~~the a~~ relatively large pressing force is required. ~~When once Once~~ the edge is plunged in the contact pin 405a, ~~a~~ slide friction force acts between the contact pin 405a and the external input signal terminal 510 on the electric wiring board 506.

The paragraphs starting at page 17, line 11 and ending at page 18, line 21 have been amended as follows.

As shown in Fig. 7, force F acts on the slope portion 501a in such a manner that the front end of the pressing portion 403a presses the slope portion 501a. At this point, the slope portion 501a is set with a predetermined angle so that the force F can be divided into force Fy and force Fz. The force Fy causes the recording head cartridge 501 to press a Y direction locating portion 501b shown in Fig. 9 to a locating portion 401d on the carriage 401 shown in Fig. 6, and the force Fz simultaneously causes the recording head cartridge 501 to press a Z direction locating portion 501c to a locating portion 401c on the carriage 401. Accordingly, the recording head cartridge 501 is located relative to the carriage 401. Moment A movement having the a rotational center near the locating portion on the carriage 401 acts on the recording head cartridge 501 in a clockwise direction in Fig. 7, and

a locating portion 501d provided on a bottom surface of the recording head cartridge 501 is pressed to a locating portion 401e. Thus, the recording head cartridge 501 is prevented from rotating, and the locating of the recording head cartridge 501 to the carriage 401 is completed.

Although the locating of the recording head cartridge 501 to the carriage 401 in the Y and Z directions was described, the locating in ~~a~~ the X direction, i.e., a longitudinal direction of the guide shaft 402, is performed in such a manner that, before the edge of the electric wiring board 506 is plunged into the contact pin 405a of the head connector 405, the predetermined locating portion (not shown) of the recording head cartridge 501 is pressed to abut on the predetermined locating portion (not shown) of the carriage 401 by an X direction biasing spring 409 shown in Fig. 4. Then, the locating in the Y and Z directions is performed, and the three-directional locating is securely performed in the recording head cartridge 501.

The paragraph starting at page 19, line 7 and ending at line 15 has been amended as follows.

The overall bridge-shape portion 403g is upwardly deflected by the force acting on the pressing portion 403a. When a wall of a casing or the like is provided on an upper portion of the carriage 401 with relatively narrow clearance, since the wall of the

casing may be in contact with the bridge-shape portion 403g by the deflection, a central portion of the bridge-shape portion 403g is previously formed in a downwardly concave shape.

The paragraphs starting at page 20, line 25 and ending at page 22, line 15 have been amended as follows.

A hood portion 403i is provided on an upper end portion of the second side plate portion 403m of the head set lever 403, and an index 403j is provided in the hood portion 403i. The index 403j is imprinted on the hood portion 403i. But, a label or the like of for the index 403j may be affixed to the hood portion 403i. The index 403j corresponds to the ink tank 502 mounted on the recording head cartridge 501[[],]; the same index is also provided on the side of the ink tank 502 (see Fig. 5). The user can mount the plurality of ink tanks on the recording head cartridge without fail by providing the indexes.

Although the two kinds of ink tanks, i.e., the black ink tank and the color ink tank, are mounted in the embodiment, one ink tank is may be mounted, but or at least three ink tanks may be mounted.

One end of the ink tank 502 is inserted under the hood portion 403i, and the ink tank 502 is mounted by a latch lever provided on the other end of the ink tank 502 to the recording head cartridge 501. Thus, the ink tank 502 is mounted by the rotational

operation, and the hood portion 403i is also provided in order that the user can ~~recognizes~~
recognize the rotational operation.

Since the hood portion 403i is provided in the head set lever 403, when the head set lever 403 is released, the hood portion 403i is also simultaneously retracted so that the recording head cartridge 501 can be mounted without obstruction of the hood portion 403i. When the hood portion 403i is previously formed in the carriage 401, it is necessary that the recording head cartridge 501 is mounted by slipping through the hood portion 403i, i.e., as disclosed in Japanese Patent Application Laid-Open No. H10-181007, it is necessary that the recording head cartridge is mounted by rotating the recording head cartridge. In the method disclosed in Japanese Patent Application Laid-Open No. H10-181007, the vertical insertion type of card edge head connector in the embodiment ~~can not~~
cannot be applied.

The paragraph starting at page 24, line 10 and ending at line 23 has been amended as follows.

The latch click 406c provided in the head set hook 406 is substantially located in the center of the width direction of the recording head cartridge 501 which is located at the substantially same position as the first operating portion 406a when viewed from the upper surface. That is to say, the portion in which the head set lever 403 engages

with the carriage 401 is the substantial center of the two pressing portions 403a, so that the head set lever 403 is not tilted even after the head is fixed. If the head set lever 403 is tilted, the head set lever 403 may be in contact with the wall of the casing or the like, which is provided above the head set lever 403 with small clearance.

The paragraph starting at page 25, line 3 and ending at line 18 has been amended as follows.

In the configuration of the head set hook 406 of the embodiment, the first operating portion 406a is operated in order to fix the head, and the second operating portion 406b provided at the position different from the first operating portion 406a is operated in order to release the head. Accordingly, while the failure of the user can be decreased, the head fixation can be secured by separating the function of the operation. If the operating portion has both the functions of fixing and releasing the head, it is necessary that the operation in which the head is downwardly pressed to be fixed and the operation in which the head is upwardly raised to be released are performed with the same part, and it is necessary to balance head fixing force, so that the head ~~can not~~ cannot be securely fixed.

The paragraph starting at page 29, line 4 and ending at line 9 has been amended as follows.

The recording head releasing portion 403c is located near both ends of the head connector 506 and also located near the rotational center of the head set lever 403, so that the user ~~can~~ need the apply only a small operating force and can obtain a very comfortable operating feel.